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# A NEW SUBSPECIES OF THE ROCK SQUIRREL, SPERMOPOHILUS VARIEGATUS, FROM ISLA TIBURON, SONORA, MEXICO

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The rock squirrel, *Spermophilus variegatus*, inhabits a broad region in the southwestern United States and adjacent México, north to Colorado, Nevada, and Utah, and southward to Jalisco, Michoacán, and Puebla (Hall, 1981:400). The species has been known for more than a half century from Isla Tiburón, in the Sea of Cortez off central Sonora (Burt, 1938:35), but that population never has been described in detail.

*Spermophilus variegatus grammurus* (Say, 1823), with type locality on the Purgatory River, Las Animas Co., Colorado, is the subspecies of rock squirrel of mainland Sonora adjacent to Tiburón. The insular population differs from *S. v. grammurus* in several distinctive ways, and represents an hitherto unrecognized race, which is named and described as follows:

***Spermophilus variegatus tiburonensis***, new subspecies

*Holotype.*—Adult male, skin and skull, Museum of Vertebrate Zoology no. 97612, from 3 mi. NE Ensenada del Perro, S end Isla Tiburón, Sonora; obtained on 10 January 1942 by M. Delgadillo, original no. 5125 of Seth B. Benson.

*Distribution.*—Known only from Isla Tiburón, Sonora.

*Diagnosis.*—Size small to medium among subspecies of species, somewhat smaller than specimens from adjacent mainland of Sonora and elsewhere in range of *S. v. grammurus*. Head, shoulders, and frequently upper back brownish interspersed with few buff-tipped hairs to dark chocolate brown overall, quite in

contrast to relatives on the adjacent mainland (see descriptions of color in Howell, 1938:136-147).

*Comparisons.*—The new subspecies needs comparison only with *S. v. grammurus*, which is broadly distributed in the American Southwest and adjacent northwestern México, including western Sonora (Hall, *loc. cit.*). From that subspecies, *tiburonensis* differs in being smaller in most cranial dimensions in specimens we have examined (see also measurements of *grammurus* in Hoffmeister, 1986:178-179) and in having a narrower mesopterygoid fossa, smaller auditory bullae, less ovoid (rounder) foramen magnum, less flattened cranium, and a shorter maxillary toothrow. The dark brownish hood and cape immediately separate the new race from *grammurus* and also from the more southerly and easterly *S. v. rupestris*, in which there is no marked darkening of the head and shoulders, as there is, for example, in the blackish-backed *S. v. buckleyi* of the Edwards Plateau region of Texas. All eight specimens examined from Tiburón have the distinctive dark brownish head and shoulders. Otherwise, aside from a darker gular region and, on the average, slightly darker feet and legs, *tiburonensis* generally resembles *grammurus* in color.

Selected external and cranial measurements (in millimeters) of the holotype, followed by those of an adult female (MVZ 74835) and those of two adult females of *S. v. grammurus* (KU 79114 and 80327 from 8 mi. SE Alamos and 9 mi. NNE Imuris, Sonora, respectively) are as follows: total length, 500, 513, 525, 515; length of tail, 222, 230, 244, 216; length of hind foot, 61, 60, 61, 64; length of ear, 25, 25, 28, 27; greatest length of skull, 60.26, 60.05, 63.84, 62.38; condylobasal length, 57.46, 56.60, 60.13, 60.15; rostral breadth, 10.16, 9.67, 10.22, 10.99; postorbital constriction, 16.20, 16.45, 16.13, 16.97; zygomatic breadth, 36.18, 36.86, 39.21,—; mastoid breadth, 21.09, 21.76, 22.55, 23.78; greatest breadth across upper molars, 15.84; 16.51, 17.94, 17.47; breadth of mesopterygoid fossa, 4.03, 4.81, 4.81, 5.41; alveolar length of maxillary toothrow, 12.53, 12.28, 13.26, 12.66; alveolar length of mandibular cheekteeth, 12.32, 11.86, 12.76, 12.48. The adult female from Tiburón weighed 675 grams.

*Remarks.*—Of the eight specimens available to us from Tiburón, six unfortunately are less than fully adult and thus their measurements cannot be used in direct comparisons. As noted, however, all eight possess the distinctive color pattern of the new subspecies, varying only in degree of brownish

coloration on the head and neck and extent of brownish on the upper back. Tiburón evidently is the only island in the Sea of Cortez on which *Spermophilus variegatus* occurs, one of only 13 native terrestrial, nonvolant mammals known from the island (Lawlor, 1983), none of which is an endemic species. The subspecific name obviously relates to that distribution.

*Specimens examined.*—Ensenada del Perro, S end Tiburón, 1 (MVZ 97611); 1 mi. W Ensenada del Perro, S end Tiburón, 1 (MVZ 97610); 3 mi. W Ensenada del Perro, S end Tiburón, 1 (MVZ 97609); 3 mi. NE Ensenada del Perro, S end Tiburón, 1 (MVZ 97612); near Las Carrizales, about 2500 ft., about 6 mi. W Bahia Santa Rosa, Tiburón, 1 (MVZ 74835); S end Isla Tiburón, 1 (KU 95282); NE Willard's Pt., Tiburón, 2 (SDSNH 19078-79).

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## Literature Cited

Burt, W. H. 1938. Faunal relationships and geographic distribution of mammals in Sonora, Mexico. Misc. Publ. Mus. Zool., Univ. Michigan, 39:1-77, fold-out map.

Hall, E. R. 1981. The mammals of North America. John Wiley & Sons, New York, 1:xv + 1-600 + *90*.

Hoffmeister, D. F. 1986. Mammals of Arizona. Univ. Arizona Press, Tucson, xx + 602 pp.

Howell, A. H. 1938. Revision of the North American ground squirrels. . . . N. Amer. Fauna, 56:1-256.

Lawlor, T. R. 1983. The mammals. Pp. 265-289, 482-494, *in* Island biogeography in the Sea of Cortez (T. J. Case and M. L. Cody, eds.), Univ. California Press, Berkeley, xi + 508 pp.

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